



The NStar Chronicle

The Project North Star Association of Canada

Volume 18 | Issue 1 | May 2022

Editor's Notes

Roger Button

This edition marks a change of leadership of our association. Richard Lodge, our longtime president, retired at the end of 2021. His replacement is Chris McGuffin. Richard's reminiscences of his time as president can be found in the Our Members column. While Richard's story talks about his past experiences, Chris' Notes from the President sets out his vision for the future of the organization. Réjean Demers, CASM's Project Manger for the North Star also addresses, in the Conservator's Corner column, how he envisages the Project restarting this year. Finally, there is a fascinating article by John Makadi and Christ McGuffin about how they found and acquired an APS 42 radar unit for the aircraft. Good reading.

As always comments and suggestions for future editions are welcomed.

PNSAC

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Notes from the President

Chris McGuffin

I showed up for the freebie, got an education and made some friends. That was my start in aviation. In 1985 I signed up for Air Cadets for something to do. One could say my mother made me. Certainly, she encouraged. The Cadets played sports and hosted camps; for free. I had no idea about the flight scholarships and other opportunities. Certainly, I was enamored with aviation. I built model airplanes and made a wind tunnel for a science fair. That wasn't much different from my sister's engagement with visual art or my brother's fascination with insects. My real passion was fixing things, improving them or making new things. My mum probably just wanted me to get out of the basement and socialize.

Aviation was exciting but I never considered earning a living from it. I studied electrical engineering at the Royal Military College. I thought a little military service would be a precursor to advancement in the civilian tech industry. Instead of Nortel I ended up serving 28 years with the Canadian Forces. Many of my friends wore the blue uniform. I wore army green or tan depending on the season. When I flew it was usually to participate in a meeting, attend training or visit a forward operating base. Still, there can be a persistence to childhood interest.

My interest in wood and metal working matured as a hobby. I have a particularly thoughtful wife who accommodated a larger work space with every move. Nonetheless, a residential workshop can be a solitary and confined space. When I retired from military service in 2017 it was time to look for different ways to pursue my interests. It would be fun to learn from new people and with tools I didn't have access to at home. I could not imagine a better opportunity than an aircraft restoration.

My timing lined up with Project North Star, a comprehensive restoration effort: metal fabrication,

engine repair, refinishing, reupholstery, overhauling mechanical systems, woodworking and more. Some volunteers contribute decades of skill and expertise while others offer enthusiasm and commitment to learn. Everyone benefits from cross training and camaraderie. Progress is important but not more than the historical value and preservation of the artefact. Each step is supervised by our project manager, an aircraft maintenance engineer employed by the Museum.

Initially, I was assigned to reproduce and restore the wood paneling that lined the interior of our North Star. Occasionally I helped with other assignments. I watched as replacement parts were fabricated, engine #4 was reassembled and bird nests were pulled out of the tail section. In 2018 I began publishing progress and event updates on the Project Facebook and Instagram pages. Many people enjoy seeing airplanes up close. Airshows are popular for good reasons. I certainly look forward to the time I spend at the aviation museum, particularly the areas normally hidden from public view. Taking a few photos to share with our social media audience was a natural fit for me. Those updates have been few during the pandemic but they will resume imminently.

2022 is going to be a year of renewal in many ways. In January I assumed the presidency of the Association. Our previous president, Richard Lodge, held the position for nearly 12 years. Richard has been involved with the Association for 20 years and I am thankful that he has agreed to stay on the Board of Directors. The Canada Aviation and Space Museum is actively renovating the conservation workshop. Plans for a return of volunteers to the Museum are being developed and restoration activity should resume in the months ahead. I am grateful for the encouragement of our supporters and the tenacity of our volunteers. We'll be back to the restoration effort soon.

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Conservator's Corner

Réjean Demers, AME—Conservator Special Project Manager Canada Aviation & Space Museum

National Volunteer Week was held recently. It was a timely call to action. Let's focus our collective strengths and resources to prepare for Project North Star RESTART 2022.

It has been roughly 20 years now, since the beginning of the North Star restoration project. Over the past two years, we've had to endure the effects of the CoVID-19 global pandemic. This spring, we have an opportunity to make an attempt to (gradually) return to normal operations. Ingenium is currently initiating actions that will permit the return of Project North Star volunteers. This will require a concerted effort on behalf of all stakeholders.

My intent is to have crews receive training, gradually integrating in numbers, until we could finally support full daily compliments based on operational capacities. Now, with the demands imposed by Ingenium's recent acquisition approval of an RCAF CC-115 Buffalo, we must act upon this news in conjunction with a collection re-org. This signifies an earlier than expected requirement for Project North Star volunteer support, due to the increased scope of work.

CASM Conservation is preparing a work schedule reliant upon this volunteer support, in order to mobilise the North Star from the Reserve Hangar. Moving forward, through consultations with all parties, obtaining guidelines and limitations, as well as setting goals and expectations so that we may provide an integrated work plan for 2022-2023.

High on our list of immediate concern is rendering 17515 mobile so that we may conduct a massive hangar shuffle. Collection objectives are driving CASM Conservation Services (and Project North Star) into a 24 month action plan which will eventu-

ally see us dispose of some artifacts and acquire one big yellow beast (115452). Thankfully, I have been able to secure accommodation within the storage hangar for the North Star between brief stints outdoors during fair weather movements, in amongst the storage hangar and the main museum.

Project North Star has an important role in reinvigorating the museum ecosystem, providing a necessary boost of youthful vigour and effervescence. You may be asking yourself if during this prolonged absence, a time machine or temporal portal was made available for us to return to a simpler time, a golden age of aviation perhaps? Disappointingly, such a device has not yet surfaced beyond the top secret labs of the NRC. We must rely upon more tangible resources, such as students, cadets and young urban professionals. Diversification and integration of alternative human resources are being tapped, like springtime sugar maples.

It's been a long winter, or two. Attempts to grasp fleeting moments of human connection leave us questioning what sort of catharsis may be obtained from a grocery store checkout aisle. I myself, have taken steps towards awkward avenues of discussion by making cold-calls to random organizations which may prove to be valuable partners in the advancement of the project. Recognizing the North Star as an important platform for discussion and broadening the scope of Canadian heritage interpretation.

With this recent streak of renewal, and a strong and healthy relationship, Project North Star and in turn, Ingenium may remain viable organizations as we continue our recovery. I look forward to hearing back from everyone, so that we may set a date for Project North Star RESTART 2022.

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Our Members

Richard Lodge.

Last New Year's Eve, December 2021, I became the third past president of PNSAC, after 12 years in the position and following several years at treasurer. I was delighted when Chris McGuffin agreed take on the role of president following the unanimous support of the board of directors.

Before starting to write this article, I made a list of some of the more important and memorable events of my presidency. This article is my recollection of

the things that have stuck in my mind over the years. During my term in office, PNSAC changed from being an experimental volunteer organization which still had to prove itself to the Canadian Aviation and Space Museum (CASM), to being part of the CASM family where PNSAC members are well respected and trusted by the museum staff and management.

Several events stand out when I think about my years as president. The first was on Canada Day 2017 shortly after Réj Demers had arrived at CASM to take over the position of Special Project Manager. The

ex RCAF Hercules C130 had arrived in April 2016 and was parked on the apron outside the Storage Hangar. A large crowd gathered around the aircraft when the day was at its hottest. Standing in the middle of the cargo ramp was Réj where for half an hour or so he entertained the crowd. The event was unplanned, and his comments were unscripted. The crowd just stood there enjoying the informality of listening to what he was saying and answering questions shouted to him.

The second event was in December 2019 when Engine #4 was moved from the Engine Shop to be located in front of the North Star in the Storage Hangar. It was a cold early winter day with snow flurries. On this occasion the engine could only be moved on its stand which had four wheels and no steering. It was towed by Réj driving CASM's forklift from the staff parking lot along the side of the building and into the Storage Hangar. It was a very slow process taking something like half an hour. By the time we got the engine safely to bed the three engine shop volunteers (me, Garry Dupont, and Charles Baril) as well as other volunteers who were walking behind the engine were really not enjoying the beginning of a Canadian winter. Réj who was sitting in the heated cab of the forklift, with a nice smile on his face, was actually quite warm!



From left to right: Garry Dupont, Réj Demers (in the cab), and Chris McGuffin.

The next event was when I was MC at the showing of the film made in 2014 when the Lancaster bomber, part of the collection of the Canadian Warplane Heritage Museum, flew to England to join the only other airworthy Lancaster in the world for a summer tour of the airshows in Britain. The epic flight was filmed throughout its three-day journey to England, during its time in England and on its re-

turn. Bill Tate, one of our very active members, arranged for the film to be shown in the auditorium of the CASM to about 250 members of the general public. The film itself was very interesting, but what made it even more interesting was that the flight crew agreed to come to Ottawa and talk to the audience after the showing of the film. Hearing the flight crew talk of the preparations and difficulties of the tour and knowing how successful it had been was particularly interesting to me. I had managed to attend the first airshow in England when the two Lancasters, a Hurricane and two Spitfires had flown together off the south coast of England, near where they would regularly pass on bombing missions during World War 2. The sound of 11 Merlin engines flying together reminded me of my boyhood in England when I would hear the bombers leaving their bases in Yorkshire to bomb Germany – quite an emotional sound all these years later.

There are always difficulties and problems to deal with when one is the head of any organization, be it in a paid position or as a volunteer. PNSAC has experienced a number of challenges during its existence. We have had two major closures and a lock down and closure caused by the Covid 19 pandemic. The Covid 19 closure needs no explaining but the previous two were necessitated by CASM staging major events in 2013 and 2016 around the Storage Hangar. While the closures were disruptive to the Project North Star operations, the presentation of the Star Wars and Star Trek exhibits allowed CASM to reach a broader audience and raise awareness of CASM. The exhibits made it impossible for the restoration team to work on the North Star aircraft for many weeks in both years. The challenge was to try to keep the restoration volunteers together when some volunteers were finding other ways to occupy their time. Many meetings and discussions took place, and another side of my role was to help the restoration volunteers understand that these closures were only temporary and that as soon as the spectacle events were finished, restoration work would start on the aircraft again. Fortunately, we did not lose many restoration volunteers although our actual non-volunteer membership dropped considerably.

During the summer of 2018 it was decided that the vertical fin of the North Star should be removed. This involved weeks of preparatory work inside the aircraft, loosening the many nuts and bolts securing the fin to the aircraft. On the appointed day a large mobile crane arrived to remove the vertical fin. The rental cost was financed by PNSAC donations received from members. It was a hot day, and the crane was duly stationed beside the aircraft. However, several of the securing bolts had been left in place and needed to be removed once the crane had been attached to the fin. Several volunteers assisted

in the attaching of the crane hook to the fin, but one volunteer, Charles Baril, offered to crawl inside the plane and remove the last remaining bolts. The inside of the plane was like an oven with no ventilation and no proper lighting. The only way Charles could communicate with the crew outside was by shouting. After about an hour of very difficult work, Charles shouted that all the nuts and bolts had been undone and the actual lifting of the fin could proceed. After the fin had been lifted by the crane, it was lowered into a specially prepared cradle. Charles emerged from the aircraft to the applause of all people outside, looking as if he was about to melt and thoroughly tired out by his exertions.



The North Star with its tail fin removed.

As president, I was involved in several other memorable events organized by Bill Tate. Bill has an amazing ability to organize events and had a substantial list of contacts. I was primarily involved as the MC of the trips while in the buses, also providing a backup for Bill should he encounter any problems. Twice we visited RCAF Trenton and once we went to Montréal and Mirabel to see the Canadair/Bombardier production line in action. The most memorable was the weekend bus trip to Hamilton to attend the airshow organized by the Canadian Warplane Heritage Museum on the Saturday and on the Sunday, a visit to the Air Canada control centre in Toronto. On the Friday evening, Bill organized a visit to the vineyards in Niagara-on-the-Lake. Sunday morning saw us all back in the bus heading for downtown Toronto, where we breakfasted in the brewery district before our Air Canada visit. Many members will have great memories of these times, which all took place prior to the closures I referred to earlier in this article.



Hamilton trip.

One of the best aspects of assuming responsibility as a volunteer is that the more one puts into it, the more pleasure and interest one gets from the work. As president, I regularly met all the senior man-

agement of CASM and many other people outside CASM. Often, I was involved in discussions about the future direction of PNSAC, which of course involved discussing future and sometimes confidential

CASM plans and operations.

A very small incident, probably four or five years ago, really demonstrated to me how as a volunteer association we had "arrived". My predecessor presidents, Bob Holmgren and Tim Timmins had to overcome the skepticism of CASM management as to whether it would be possible for us to sustain a continuing volunteer effort. By the time I became president in 2010, CASM management had accepted that our members would work to a very high standard of restoration work and would continue to put in several thousand hours of painstaking and sometimes difficult work every year. The incident I am remembering best is a particular day when I went upstairs to the office level at CASM and saw a group of CASM staff talking in the corridor. I stopped and said hello to them and then started to excuse myself by say-

ing that they were having a discussion and I would get out of the way. Chris Kitzan, the CASM Director General, looked at me and said "There was no need to go away Richard, you are part of the family". This for me was a watershed moment and one I shall always appreciate.

Looking towards the future, as the pandemic begins to be contained, we must get the restoration operation going again and try to recruit more members and restoration volunteers. I feel very confident that Chris McGuffin and the other directors of PNSAC will be able to do this and continue to help CASM in volunteer work in addition to North Star restoration. I look forward to continuing volunteering, but definitely not climbing around the top of the aircraft in a full safety harness!

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APS 42 Radar – Another Piece of the North Star Puzzle

The article below was written by our members John Makadi and Chris McGuffin. Chris and John played key roles in the acquisition of the APS 42 Radar for the North Star aircraft. In 2019 John was approached by Réjean Demers, CASM's project manager for the North Star restoration to see if he could locate the radar unit which was missing from the aircraft as explained below. John was successful and as a result in 2001 Réj asked Chris if our association could arrange for the acquisition of the unit. John and Chris coordinated its acquisition and what follows is a very fascinating story about what may be the only unit of its kind still in existence. The authors have been very modest about their contributions in dealing with a very challenging process made more difficult by the pandemic Covid-19.

The North Star was the RCAF's first strategic lift platform. It was dispatched across the country, and bridged the Atlantic and Pacific in service to Canada. In the late 1950s, the RCAF began upgrading the fleet with the addition of the APS-42 military navigation/weather radar. This radar was still sensitive equipment in 1966 when North Star 17515 was donated to the Canada Aviation and Space Museum. The radar was stripped out of the airframe along with the radios and other sensitive equipment.

Project North Star is frequently described as an effort to return 17515 to the condition she was in on her last day of service with the RCAF. The hunt was on. In 2019 Project North Star Association of Canada began searching for an APS-42 radar. Initial results were discouraging. US aviation museums with USAF aircraft had no components to offer. Fur-

ther research of US military logistics documents revealed that US Department of Defense disposal instructions for APS-42 radar was to "Destroy" them due to their sensitive nature at the time.



Radar – The Unit.

We were disheartened by that discovery but certainly not defeated. Over the years, PNSAC volun-

teers have been resourceful about rescuing parts and assemblies. The search continued. In the spring of 2021, while continuing on-line research John stumbled across an eBay listing for an APS-42 transmitter out of Cross Timbers, Missouri (Ozarks). The seller, a military communications enthusiast, acquired the radar in a lot purchase of US Government surplus equipment. After negotiating an acceptable price for the radar, we just needed to get it to CASM.



Radar – The APS-42.

Shipping freight is usually pretty straight forward. In the summer of 2021, there were “unusual” circumstances. Transportation was a bottle neck to many industries and costs rose across the carriers. We were unable to find a freight company willing to collect the radar in the seller’s remote location. Our seller was willing to deliver to Springfield, Missouri (for a fee) but would not provide a crate. Furthermore, the freight companies that offered custom crating services were prohibitively high. Then we

made contact with the “Air and Military Museum of the Ozarks” (AMMO) – a small volunteer-based museum in Springfield. The volunteers at AMMO were sympathetic to our cause and enthusiastic to help. They agreed to receive our radar from the seller, build a custom crate and transfer it to the freight carrier. We were grateful to pay them a small honorarium which wasn’t much more than the cost of lumber for the crate. This was a wonderful example of museums cooperating across borders to preserve aviation heritage. AMMO ended up hosting the crated radar for several weeks. The hurdles of NAFTA attestations and the export of US military technology took additional bureaucratic kung-fu but the radar arrived safely in Ottawa on 10 June, 2021.



Radar – Opening the Unit.

After 17 months of social distancing, Project North Star volunteers and CASM staff gathered in the parking lot to celebrate the arrival of a missing radar. Customs seals were removed and a wood crate was opened to reveal our beautifully preserved APS-42. We look forward to seeing this new artifact in the nose wheel well of 17515.

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